

**REMARKS**

Claims 1, 3-8, 10-11 and 13-16 are pending in this application. By this Amendment, claims 1, 6 and 16 are amended to even further distinguish over the applied references. Support for the amendments can be found, for example, at page 15, line 20 to page 16, line 3 of the specification as filed. No new matter is added.

**I. The Claims Are Patentable Over The Applied References**

The Office Action (1) rejects claims 1, 3-5 and 16 under 35 U.S.C. §103(a) over U.S. Patent No. 6,806,982 to Newswanger et al. (Newswanger) in view of U.S. Patent Application Publication No. 2001/0013959 to Long; and (2) rejects claims 6-8, 10-11 and 13-15 under 35 U.S.C. §103(a) over Newswanger in view of Long and U.S. Patent Application Publication No. 2003/0117615 to Mui. Applicants respectfully traverse the rejections.

Regarding independent claims 1 and 16, the applied references, even when combined, fail to result in (1) "exercising control so that the object beam in the object optical system is reflected in an exposure direction so as to be incident on the holographic recording medium or in a non-exposure direction so as not to be incident on the holographic recording medium selectively pixel by pixel in accordance with the data page to be recorded" and (2) "recording data pages by N exposures for each data page at  $(N + 1)$  levels of gradation with respect to each of areas of the recording layer corresponding to a single pixel of the data page" (emphasis added) as recited in claim 1 and similarly recited in claim 16.

Regarding independent claim 6, the applied references, even when combined, fail to result in "the reflection type spatial light modulator is configured so that it is capable of making N exposures of each data page and capable of at most N times of reflection with respect to each of areas of the recording layer within an exposure time  $t_0$ , where  $t_0$  is the exposure time necessary for exposing one of the areas of the recording layer by the object beam corresponding to a single pixel of the data page" (emphasis added).

Regarding feature (1) quoted above, The Office Action cites merely to Fig. 1 in alleging that Newswanger discloses this feature. Newswanger discloses that the object beam of the system is modified by a spatial light modulator (SLM) (see col. 7, lines 1-10). Newswanger discloses "hologram recorder 100 is shown using lens pair L3 and L4, to, for example, remove undesired effects such as, but not limited to, high frequency image components such as pixel or grid artifacts that resulted from an SLM display with pixels, a variety of different optical systems can be used" (col. 10, lines 25-29). Newswanger does not disclose exercising control so that the object beam in the object optical system is reflected in a non-exposure direction so as not to be incident on the holographic recording medium when necessary.

Long uses LCD 68 to provide desired transparency and opacity to modulate the converging beam 57 (Fig. 1). Thus, Long fails to cure the deficiencies of Newswanger regarding feature (1) quoted above.

Regarding feature (2) quoted above, the Office Action acknowledges that Newswanger fails to disclose making exposure with respect to each of areas of the recording layer corresponding to a single pixel of the data page, but cites to Long as allegedly curing this deficiency.

The Office Action cites to Figs. 6-7 and paragraphs [0072] and [0078]-[0085] of Long as allegedly disclosing that each of areas of the recording layer corresponding to a single pixel of the data page.

Long discloses that the composite image is built up on the focal plane 80 from a series or sequence of separate exposures (Fig. 7, steps 612-624). One exposure footprint corresponds to a small part of the composite image, and each small part is displayed on LCD in full size sequentially. Thus, Long fails to disclose recording data pages by N exposures for

each data page at (N + 1) levels of gradation with respect to each of areas of the recording layer corresponding to a single pixel of the data page.

For the foregoing reasons, Applicants request withdrawal of the rejections.

**II. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



James A. Oliff  
Registration No. 27,075

Jonathan H. Backenstose  
Registration No. 47,399

JA0:JHB/mab

Attachment:  
Petition for Extension of Time

Date: May 15, 2009

**OLIFF & BERRIDGE, PLC**  
**P.O. Box 320850**  
**Alexandria, Virginia 22320-4850**  
**Telephone: (703) 836-6400**

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